

DEALING WITH THE DIABETIC DIET

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Diabetes affects 4 to 5 percent of the population. One-half of those suffering from diabetes are unaware that they have this disorder.

This publication explains the diabetic diet and the exchange lists provided by your physician, information about diabetes mellitus and the importance of food in its treatment, planning menus using the food exchange lists, serving sizes, food preparation, foods to avoid, seasonings for the diabetic and where to obtain other diabetic resources.

Abnormal Carbohydrate Metabolism

Diabetes mellitus, commonly referred to as "sugar diabetes," is a condition in which the body does not have enough of the hormone insulin produced by the pancreas. Insulin helps the blood nourish the body with a sugar called glucose. For the cell to absorb glucose, insulin must be present.

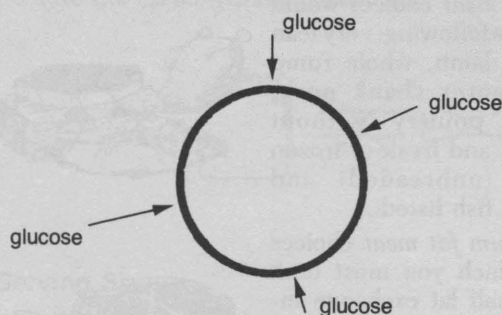


Figure 1. Insulin present.

The digestive system breaks down glucose from sugars and starches in food. The cell cannot absorb the sugar necessary for energy because of insufficient insulin. Therefore, sugar remains in the blood stream and spills into the urine. If a person has diabetes, the body has abnormal carbohydrate metabolism that

prevents the adequate utilization of starches. This, in turn, affects fat and protein metabolism.

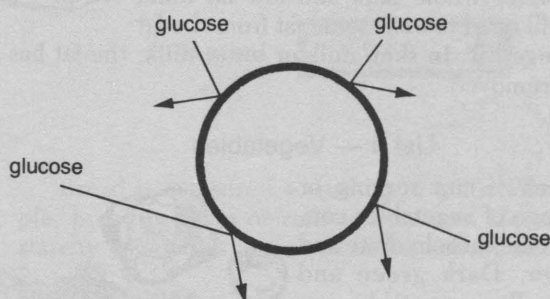


Figure 2. Lack of insulin.

Diabetic Diets

Food plays an important part in the control of diabetes. Diabetes may be treated by diet alone, by diet and insulin administration or by diet and oral drugs. In mild cases of diabetes, especially in the overweight individual, the disease can be controlled by diet alone.

Diets for treating diabetes are designed to be nutritionally adequate and consist mainly of a reduction of carbohydrates. Carbohydrates are spaced throughout the day to reduce the strain of impaired carbohydrate metabolism. The nutrient needs and variety of foods are the same for the diabetic and the non-diabetic. The carbohydrate in each meal is distributed according to the type of insulin being used and is modified according to the individual's needs (height, weight, age, sex and activity) to insure that carbohydrates are used at regular intervals. In the diabetic diet, the carbohydrate is constant in quantity. Too little carbohydrates in a meal is as undesirable as too much sugar.

Meal Planning

The doctor prescribes the diabetic diet to be followed. The most commonly used diabetic diet is the

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Food Exchange Lists System. This system can add variety to meal planning. The foods are grouped into six food choice or substitution lists according to the amounts of carbohydrate, protein and fat. The food lists allow for a wide range of food preferences and food costs. Each list includes a wide selection of foods that can be substituted freely within the list and still supply the same quantities of protein, fat, carbohydrates, calories, vitamins and minerals.

Food Exchange Lists

List I — Milk

Use the amount of skim milk or skim buttermilk listed in your meal plan. All foods in the milk group supply carbohydrate, protein and a trace of fat. Milk is a leading source of calcium in the diet. If you prefer whole milk and low fat milk, you will need to omit some fat from the fat exchange list. In skim milk or buttermilk, the fat has been removed.



List II — Vegetables

Each ½-cup serving or exchange of vegetables contains some carbohydrate and protein. Dark green and deep yellow vegetables are good sources of vitamin A, necessary to prevent night blindness. Some vegetables contribute vitamin C — asparagus, broccoli, cabbage, brussel sprouts, greens, tomatoes and turnips. Vegetables contain some B₆, potassium, folacin and fiber. If fat is added in preparation of vegetables, one fat exchange should be omitted.



Starchy vegetables contain more carbohydrate. Therefore, starchy vegetables such as corn, lima beans, potatoes and green peas are found in List IV — Bread Exchanges.

List III — Fruits

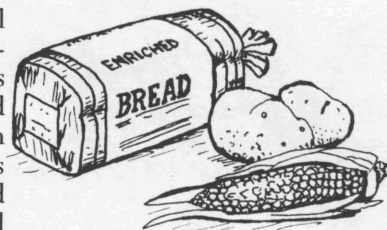
Fruits contain carbohydrates. The amount of fruit for one exchange varies because the amount of sugar in fruit varies. For example, dried fruits are very high in sugar; only 2 dates or 4 apricot halves make one fruit exchange. One small apple or ¾ cup of fresh strawberries constitutes one fruit exchange.



Fruits contain vitamins, minerals and fiber. Citrus fruits and juices are good sources of vitamin C, also found in raspberries, strawberries, cantaloupes and honeydews. The deep yellow fruits are good sources of vitamin A. Many fruits, particularly bananas, are good sources of potassium. Fruits may be eaten fresh, dried, canned or frozen as long as no sugar is added.

List IV — Bread

The bread list includes bread, cereal and starchy vegetables. Bread contains carbohydrates and protein. Whole grain and enriched breads and cereals, germ and bran products and dried beans and peas are good sources of iron and thiamin. The whole grain, bran and germ products are good sources of fiber, as are dried beans and peas. Starchy vegetables are in this list because they contain as much carbohydrate and protein as one slice of bread. Prepared foods that contain higher amounts of fat, such as corn muffins, pancakes and french fried potatoes, are noted in this list. One fat exchange must be omitted when these choices are made.

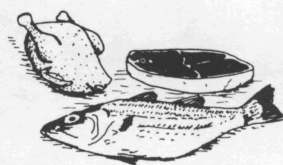


List V — Meat

All foods in the meat exchange list contain protein and fat. Meats contain varying amounts of fat so the meat list has been divided into three different lists — lean meat, medium fat meat, and high fat meat — depending on the amount of fat in 1 ounce or one exchange.



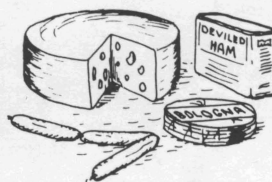
- *Lean meat* choices would be the following: very lean beef, lamb, whole rump or center shank pork, veal, poultry (without skin), and fresh or frozen fish (unbreaded) and other fish listed.



- *Medium fat meat* choices in which you must omit one-half fat exchange include: ground beef (15 percent fat), corned beef, rib eye and commercial ground round, pork loin and boiled ham, organ meats, eggs, cheese and peanut butter.



- *High fat meat* choices in which you omit one fat exchange would be: ground beef with 20 percent fat, several beef steaks (club and rib), chuck and commercial hamburger,

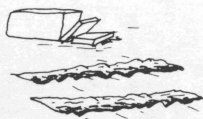


breast of lamb, pork spare ribs, deviled ham, breast of veal, poultry such as capon and goose, cheddar cheeses and cold cuts.

Choices will depend on the diet prescribed by your physician based on your blood lipid (fat-like substances) values. An average 3-ounce serving of meat is equal to about 4 ounces of raw meat. Meats should be baked, broiled or roasted. If meats are fried, omit one fat exchange.

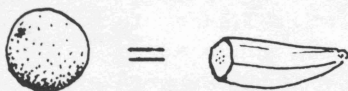
List VI — Fats

Each serving from the fat list contains fat. Fats come from animals or vegetables and range from liquid oils to hard fats. To aid in planning a diet low in saturated fat, the fats containing polyunsaturated fats have been identified. Foods such as butter or cooking oil from this list should be used for cooking and/or seasoning foods.

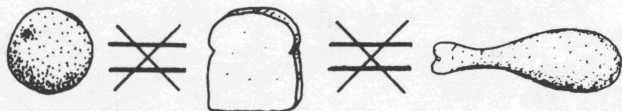


Substitutions

In using the food lists, substitute only foods within each food list. In the fruit list, one small orange is equal to one-half small banana.



One serving from the fruit list cannot be substituted for one serving from the bread or meat lists because the carbohydrate varies.



Serving Size

All foods included in the lists are in measured amounts. Most foods are measured after they are cooked. The serving size of each food given in the list is defined in household measures — 8-ounce measuring cup and standard measuring spoons.

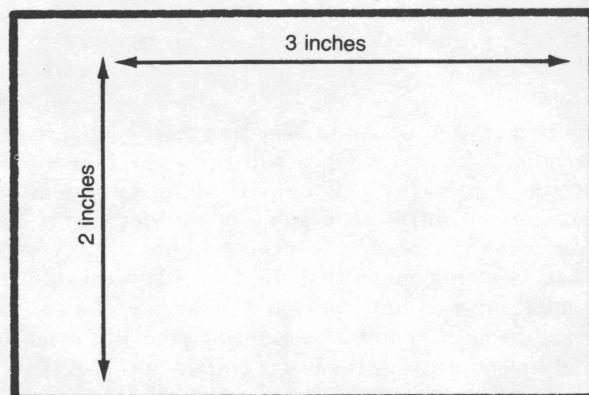


Dry and liquid measuring cups

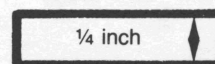


Measuring spoons

Meat is measured in ounces. One ounce of cooked meat is a piece this size:



Thickness



Bread is measured according to units. For example, bread in slices or rolls in numbers. Cereals and starchy vegetables are given in household measures.

Special Foods

It is not necessary to buy special or dietetic foods for a diabetic diet. Most foods eaten by the family are allowed on the diabetic diet.

To avoid buying expensive special diet foods, buy fresh fruits and vegetables or those canned or frozen with no added sugar, such as canned, unsweetened pie fruit. Sweeten these at home using your favorite artificial sweetener. You may even want to preserve fruits at home, freezing or packing them in water only. Fruits canned with sugar may be drained and rinsed in cold water to remove the syrup.

Food Preparation

Cook food without the addition of fat or sugar. Only fry foods in a portion of the fat given in the fat list for that particular meal. Trim all visible fat from meats before cooking. Recommended methods of food preparation for those on diabetic diets are boiling, baking, roasting or broiling.

Food for the diabetic may be prepared with that for the entire family. Remove the portion, however, before extra fat, flour, sugar, sauces or gravies are added.

Fat-free broth or bouillon cubes may be added to enhance the flavor of vegetables.

Foods to Avoid

The person with diabetes should be careful about the kind and amount of food he eats. Concentrated sweets, such as pies, colas, candy, syrup and jelly,

contain large quantities of sugar. Use only as directed by your physician. The diabetic's body is not producing enough insulin to allow extra sugar to be used for energy. Alcoholic beverages should be omitted unless allowed by the doctor because they contain carbohydrates.

Read the nutrition information on the label to determine the amounts of carbohydrate, protein and fat in the food. This will help to determine relative amounts of nutrients in some of the new foods and convenience foods. The term dietetic on processed foods does not mean that the food is necessarily intended for a diabetic person or that the food can be eaten in large quantities. Consult your physician or dietitian concerning the use of certain new "sugar-free or fat-free foods."

Seasonings for the Diabetic

Herbs or spices such as parsley, mint, garlic, dry mustard and pepper can be used freely. Lemon, saccharine, vinegar, fat-free bouillon cubes, fresh unsweetened cranberries and rhubarb, unflavored gelatin, coffee and tea also are essentially calorie free. You can enhance the flavor of any green salad by preparing a dressing with these calorie-free foods. Combinations of tomato juice and vinegar plus your favorite herbs and spices will add flavor without adding extra calories to your salad.

Recommended Diabetic Resources

A physician prescribes a specific diabetic diet according to individual needs. Planning meals using the various food lists can add variety and interest to a diabetic's meal.

Some recommended resources to aid in planning menus using the food lists are listed below.

A free booklet *Learning to Live with Diabetes* can be obtained from the following address:

Special Project Director
Office of Program Planning
State Department of Health Resources
1100 W. 49th Street
Austin, Texas 78756

Another booklet *Exchange Lists for Meal Planning*, containing the six food lists, can be purchased for a minimal charge from any of the following addresses:

American Dietetic Association
430 North Michigan Avenue
Chicago, Illinois 60611

The American Diabetes Association, Inc.
1 West 48th Street (600 Fifth)
New York, New York 10020

The American Diabetes Association
South Texas Affiliate, Inc.
P. O. Box 19246
Austin, Texas 78711

A positive attitude toward a diabetic diet helps. Learn to select the allowed foods on food lists whether eating at home, in a restaurant, in a friend's home or when traveling.

When traveling by commercial airlines, request a standard diabetic diet when making reservations. Most airlines require from 4 hours to 3 days notice.

Careful planning can mean that a diabetic can look forward to mealtime and at the same time protect his health with well-balanced meals.

References

Texas Dietetic Diet Manual, Texas Dietetic Association, Revised edition, 1973.

What Everyone Should Know About Diabetes, American Diabetes Association, New York.

Exchange Lists for Meal Planning, American Diabetes Association-American Dietetic Association, New York and Chicago.

Acknowledgment

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